

Amendments to the Specification:

Replace the paragraph beginning on page 5, line 10 with the following amended paragraph:

means for conveying combustion air to said desorption chamber and to said second furnace means, and for conveying the desorbed contaminants from the ~~absorption~~desorption chamber to the second furnace means; and

Replace the paragraph beginning on page 7, line 10 with the following amended paragraph:

wherein said second furnace means for thermal oxidation includes at least two stages including a combustion stage in which the contaminants are combusted with a first supply of combustion air at a substantially adiabatic temperature in the range 900 - 1200°C, and a second stage in which a second supply of combustion air is admitted for combustion of residual compounds and for controlling the offgas outflow temperature.

Replace the paragraph beginning on page 11, line 5 with the following amended paragraph:

Remediated soil is recovered from desorber kiln at 28 at burner end ~~[[21a]]~~20a. The vapours exiting the desorber in duct 21 typically at around 275°C, typically comprise 50% steam, 5% carbon dioxide, 44% nitrogen, and approximately 0.5-1% volatile hydrocarbons contaminants desorbed from the soil bed. As previously mentioned these vapours are cleaned of solid matter entrained from the kiln by cyclone 22 and/or bagfilter 23 before being pre-heated in heat exchanger stage 44 and injected into the thermal oxidiser via line 45.

Replace the paragraph beginning on page 11, line 12 with the following amended paragraph:

The thermal oxidiser 30 is a 2-stage refractory-lined chamber comprising one or more burners to assist complete combustion of the hydrocarbon contaminated vapours from the thermal desorber. Typically the gases are heated and combusted at 1000-1200°C for

approximately 1000ms. To minimise NO_x formation, and to decrease radiation to the front of the heat exchanger, the thermal oxidiser has two sequential combustion zones; i) the primary combustion zone (P) and, ii) the post-combustion zone (Q). Preheated combustion air, preheated contaminant vapours and auxiliary fuel are injected into the primary combustion zone using, preferably, but not restricted to, a nozzle mixing burner or burners 36. The air in the gas mixture is controlled to give an overall stoichiometric or slightly sub-stoichiometric combustion. Additional unheated combustion air is injected via ports around the periphery and at the entry to an afterburner [\[\[55\]\]57](#) to give an overall excess oxygen in the hot gases of approximately 3% to ensure complete destruction of contaminant hydrocarbons, to provide additional turbulence, and to control the temperature of the gases entering the heat exchanger to typically between 950 and 1100°C. Gas temperatures above 1100°C will lead to decreased heat exchanger life.